REMARKS

Claims 1-23 are pending in the present application. In the Office Action mailed April 19, 2006, the Examiner rejected claims 1-23 under 35 U.S.C. §103(a) as being unpatentable over either Prunier et al. (FR 2 536 320) or Behnke et al. (USP 2,510,207) in view of Bailey et al. (USP 5,266,778). Applicant appreciates the Examiner's withdrawal of the objection to the specification and of the rejections under 35 U.S.C. §§ 112 and 102.

The Examiner provisionally rejected claims 1-23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 24-43 of Application No. 10/604,459. However, Application No. 10/604,459 is no longer pending, as the Examiner mailed a Notice of Abandonment on March 14, 2006, one month before the current Office Action was mailed. This provisional rejection should therefore be withdrawn. With respect to the other provisional rejection of claims 1-23 under the doctrine of obviousness-type double patenting as being unpatentable over claims 22-25, 27-35, 37-40, 44, 45, 48-50, and 54 of copending Application No. 10/708,657, Applicant notes that the provisional obviousness-type double patenting rejection is not the only remaining rejection in either the present application or Application No. 10/708,657. The Examiner has applied rejections under § 103 in both the current Office Action and in the Office Action mailed on June 26, 2006 for Application No. 10/708,657. Pursuant to MPEP §§ 1490(V)(D) and 804(I)(B)(1), Applicant therefore takes no present action with respect to this provisional rejection.

In rejecting independent claims 1, 12, 18, and 23, the Examiner stated that a combination of either Prunier et al. or Behnke et al. with Bailey renders the claims obvious. The Examiner conceded that Prunier et al. and Behnke et al. do not disclose "a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value," but asserted that Bailey et al. teaches a dynamic temperature control achieving such subject matter. *Office Action, 04/19/06,* p. 6. For the motivation to combine these references, the Examiner stated that it would have been obvious to do so "in order to provide accurate, dynamic control of fluid temperature until expiration of a specific time period and/or until a temperature falls below a predetermined certain value, or set point." *Id.* at 7.

Initially, Applicant notes the impropriety of applying references in the alternative. MPEP § 706.02 (stating that cumulative rejections should be strictly avoided). The Examiner must apply the best reference, and avoid duplicative rejections wherever possible. *Id.*

In substance, the rejection is unsustainable because Bailey et al. does not teach or suggest the subject matter lacking in both Prunier et al. and Behnke et al. Additionally, the Examiner's proffered motivation to combine these references is invalid because Bailey et al. actually teaches away from the Examiner's proposed combination.

Bailey et al. teaches a system similar to a thermostat in which a particular set point temperature is chosen. The system automatically heats and cools a coolant liquid to maintain temperature at the set point, plus or minus a temperature differential (dT) of 3 degrees. *See* Fig. 5, Col. 6, ll. 29-39. Accordingly, Bailey et al. regulates temperature in a thermal load (such as a thermal blanket) not merely by circulating a fluid, but by utilizing thermoelectric heat exchangers or thermal modules 26 which are controlled by discrete voltage levels to actively heat or cool the fluid. Col. 4, l. 67 to col. 5, l. 2. Bailey et al. does not indicate that an automatic cessation of fluid circulation occurs when a desired temperature has been reached. Rather, Bailey et al. teaches that thermal modules 26 are no longer powered for heating or cooling when the set point temperature is reached, but that fluid circulation is constantly maintained. Col. 5, ll. 3-16. The mention in Bailey et al. of "selective" circulation refers to a user's ability to turn the system and its pump on and off via power switch 16, independent and irrespective of temperature control. *Compare* Col. 2, ll. 56-60; col. 4 ll. 9-15 *with* col. 5, ll. 15-16 (when set point temperature is reached, a zero voltage input to thermal modules 26 results in no heating or cooling). Thus, Bailey contemplates only a heating mode and a cooling mode, but not an operational non-circulation mode. *See* Fig. 3; Col. 4, ll. 50-52 (HEAT and COOL states are switched by a double throw relay).

Furthermore, Bailey et al. actually teaches away from a functionality similar to that of the present invention. The system of Bailey relies on either a remote temperature sensor in a thermal blanket or a liquid temperature sensor in the reservoir. Col. 4, ll. 30-39. To shut off circulation would inevitably cause non-uniformities in the temperature of the liquid. For example, if the set point temperature for the thermal blanket was 90 degrees and the system ceased circulating fluid once the fluid sensor 30 indicated 90 degrees was reached, the fluid temperature in the reservoir would likely remain within an acceptable range dT of 90 degrees much longer than the fluid temperature of the thermal blanket. Thus, the fluid in the thermal blanket's manifold might lower well beyond the dT of 90 degrees before the reservoir sensor 30 indicated that the system should restart circulation to heat the fluid. Such a result would be contrary to the teachings of Bailey et al., the purpose therein being to maintain a relatively constant temperature in the thermal blanket. *See* Col. 3, ll. 10-14. Therefore, continued circulation is necessary.

Additionally, the Examiner has not established any line of reasoning to show why one of ordinary skill in the art would believe it obvious to equip a welding torch with such a precise and complex temperature control system as that of Bailey et al. The present system operates with a temperature ceiling only, generally circulating fluid to cool the torch while the temperature thereof is higher than the ceiling. It is of no affect to the system of the present invention how low the temperature of the fluid goes below the ceiling. One of ordinary skill in the art would not find it necessary or appropriate to maintain the temperature of fluid through a welding torch at one precise temperature, let alone to do so by heating the fluid, as Bailey et al. teaches.

In contrast, claim 1 calls for the circulation of a coolant through a welding torch to be maintained after deactivation of the welding-type component "if a measured coolant temperature exceeds a threshold." (Emphasis added). As discussed above, the system of Bailey et al. has no mechanism or mode by which a temperature controller determines whether to maintain coolant circulation or to cease coolant circulation. Coolant circulation is continuous in the system of Bailey et al. Therefore, since the art of record does not teach or suggest all the elements of claim 1, Applicant respectfully requests that the rejection of claim 1 and all claims depending therefrom be withdrawn.

Similarly, claim 12 calls for coolant circulation to continue after deactivation of a torch "until a temperature of the coolant falls below a predetermined value." (Emphasis added). Thus, a controller actively turns on and off circulation to perform temperature regulation. No heating or cooling elements are necessary and no temperature range dT is contemplated. Contrastingly, the system of Bailey et al. uses thermal modules to actively maintain the temperature of a fluid within a range (i.e. heating the fluid), and so must continually circulate the fluid. The present invention provides a system that is remarkably less expensive than the system of Bailey et al., that is more appropriate for a welder. As such, Applicant requests withdrawal of the rejection of claim 12 and all claims depending therefrom.

Claim 18 calls for "maintaining coolant circulation through the welding-type component if the coolant temperature exceeds a threshold." (Emphasis added). As shown with respect to claim 1, Bailey et al. does not teach or suggest such a limitation. Thus, claim 18 is patentably distinct over the art of record. Applicant accordingly requests withdrawal of the rejection of claim 18 and all claims depending therefrom.

In addition, claim 23 calls for "means for maintaining coolant circulation until coolant temperature falls below a certain set point." (Emphasis added). As Applicant has shown above, maintaining circulation "until" coolant temperature falls below a value is not taught or suggested

by Bailey et al. Accordingly, claim 23 is patentably distinct over the art of record, and Applicant requests withdrawal of the rejection thereof.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-23.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.[1]

Respectfully submitted,

/Timothy J. Ziolkowski/

Timothy J. Ziolkowski
Registration No. 38,368
Direct Dial 262-376-5139
tjz@zpspatents.com

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P.O. ADDRESS:
Ziolkowski Patent Solutions Group, SC
14135 North Cedarburg Road
Mequon, WI 53097-1416
262-376-5170

[1]The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-2623. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2623. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2623. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 50-2623.